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A workshop on shock waves was held at North Carolina State University, May 23-25, 1990. The workshop brought together mathematicians interested in the following areas related to shock waves: the theory of hyperbolic conservation laws, numerical methods for hyperbolic and parabolic systems of equations, the theory of travelling waves (viscous profiles) for parabolic systems, and applications.

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VISCOUS PROFILES AND NUMERICAL METHODS FOR SHOCK WAVES

FINAL REPORT

MICHAEL SHEARER

U.S. ARMY RESEARCH OFFICE

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NORTH CAROLINA STATE UNIVERSITY

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A volume of proceedings is being published by SIAM, the Society for Industrial and Applied Mathematics. The papers in the volume of proceedings reflect the considerable breadth of interests in analysis and applications at the workshop. Consequently, this volume is a rough survey of current mathematical work in the area of shock waves, and provides a rich source of ideas and problems in theoretical and numerical aspects of the field and its many applications. One theme of the meeting that is strongly represented in the proceedings is the power of ideas from dynamical systems that are being adapted and developed in the context of shock waves. A related theme, the approximation and stability of shock waves, is treated in several papers. Applications are another prominent feature of these proceedings. Many of the papers on applications present models that are comparatively new to the mathematics community, with interesting phenomena and ideas for their interpretation.